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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/588,286	07/09/2007	Yasumasa Dekishima	P30416	6444

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EXAMINER	
ZUCKER, PAUL A	

ART UNIT	PAPER NUMBER
1621	

NOTIFICATION DATE	DELIVERY MODE
11/30/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/588,286	DEKISHIMA ET AL.	
	Examiner	Art Unit	
	Paul A. Zucker	1621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 September 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *7-10,20 and 21* is/are pending in the application.

4a) Of the above claim(s) *7,9 and 10* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *8,20 and 21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *9/22/2010*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Current Status

1. This action is responsive to Applicants' amendment of 22 September 2010.
2. Receipt and entry of Applicants' amendment is acknowledged.
3. Applicant's cancellation of claims 1-6 and 11-19 is acknowledged.
4. Applicant's addition of new claims 20 and 21 is acknowledged.
5. Claims 7-10, 21 and 22 are pending.
6. The rejection under 35 USC § 103 set forth in paragraph 3 of the previous Office Action mailed 23 March 2010 is withdrawn in response to Applicants' in favor of the new rejection below.

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New Rejections

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Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claim 20 is finally rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 20recites the limitation "wherein the optically active alcohol represented by formula (2) is 2-pentanone or 2-hexanone" in lines 1-2. The compounds 2-pentanone or 2-hexanone are neither alcohols nor capable of optical activity. The intended scope of claim 20 is therefore impossible to determine and claim 20 is rendered indefinite.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 8, 20 and 21 are finally rejected under 35 U.S.C. 103(a) as being unpatentable over Prout et al (Journal of Organic Chemistry, Two Acids Containing the Active 2-Heptyl Group, 1962, 27, pages 1488-1490) when considered with

Francke (US 4, 853, 217 08-1989). NOTE: For the purposes of this rejection the Examiner presumes that 2-pentanone and 2-hexanone are intended by Applicants to be 2- propanol and 2-hexanol.

Instantly claimed is a method for producing (R)- or (S)-1-methylalkyl malonic acid represented by formula (1) as set forth in instant claim 8.

Prout teaches (Paragraph bridging pages 1488 and 1489 to page 1489, paragraph bridging columns 1 and 2), a process for the synthesis of optically active 2-methyloctanoic acid via reaction of 2-bromohepanol with phosphorous tribromide (PBr_3) to give the corresponding bromide, reaction of the bromide with the sodium salt of dibutylmalonate formed from dibutylmalonic acid and sodium butoxide formed *in situ* by reaction of sodium and butanol. Prout teaches (Para bridging pages 1488-1489) the formation of (+)-2-heptanol having the (S) configuration as instantly required. Prout teaches (Page 1489, column 1, 1st 2 full paragraphs) that racemization is a problem that is encountered when converting the optically active alcohol to the corresponding bromide. Prout teaches (Page 1489, bridging cols 1 and 20 the formation of the (-) - 2- heptylmalonic acid having the instantly required (R) configuration. Prout teaches (Page 1489, column 1, last 2 full paragraphs-column 2, middle) the saponification of the ester to the malonic acid which corresponds the instant compound of formula (1) in which R^1 = C_5-alkyl, followed by decarboxylation to give 2 –methyloctanoic acid.

The difference between the process taught by Prout and that instantly claimed is that instead of a bromide leaving group in the alkylating agent as employed by Prout, a sulfonyloxy leaving group is instantly employed.

Francke, however teaches (Column 2, lines 34-40) a process for the synthesis of 2-methylheptanoic acid which is essentially similar to that employed by Prout except for the fact that Francke converts the required alcohol to the corresponding sulfonate ester before using it to alkylate sodium malonate. Francke teaches (Col. 2, l. 57 – col. 3, l. 30) the use of his 2-methylheptanoic acid to produce a composition for controlling the pear leaf blister moth by reaction of 2-pentanol. Substitution of 2-hexanol would produce a final product which is an adjacent lower homolog of the compound of Francke which would be expected to have similar biological properties.

One of ordinary skill in the art would have been motivated to modify Prout's process by activating the optically active alcohol by conversion to the sulfonate ester, as taught by Franke, in order to avoid racemization of the alcohol as taught by Prout to occur when PBr_3 is employed. Since the carbon-oxygen bond is not broken in the formation of the sulfonate ester as it is in the formation of the bromide there would have been a reasonable expectation for success.

Thus the instantly claimed process would have been obvious to one of ordinary skill in the art.

Examiner's Response to Applicants' Remarks With Regard to This Rejection

9. Applicants have presented arguments with regard to this rejection. The Examiner responds to these below:

   a. Applicants argue that Prout is simply predicting, based upon the teaching of Gerrard, that racemization is expected to occur. The Examiner agrees and points out that it is this expectation of racemization that motivates one of ordinary skill in the art to activate the 2-heptanol of Prout for alkylation by conversion to the sulfonate.

   b. Applicants argue that (-)-2-heptylmalonic of optical purity of 90% or higher was not obtained. The Examiner again agrees with Applicants. Prout, however, teaches (*vide supra*) the formation of optically pure (+)-2-heptanol which, by applying the modification taught by Francke, can be converted into optically pure malonate via the sulfonate by an S_N2 process for which no mechanism for racemization exists.

   c. Applicants argue that Prout does not teach specific methods for isolating racemic substances. The Examiner agrees. The Examiner points out, however, that the combined teachings of Prout and Francke, along with the knowledge of the ordinary artisan, teach a method for the alkylation of malonates which achieves the instantly claimed optical results by avoiding the formation of racemic mixtures. The method corresponds to that instantly claimed.

d. Applicants note that Francke does not refer to optical purity. The Examiner agrees but points out that the rejection of record does not rely on such reference.

Applicant's arguments filed 22 September 2010 have been fully considered but they are not persuasive for the reasons set forth above.

Conclusion

10. Claims 7-10, 20 and 21 are pending. Claims 8, 20 and 21 are finally rejected. Claims 7 and 9-10 are held withdrawn from consideration as being drawn to a non-elected invention. A complete response to this action should include cancelation of claims to non-elected subject matter or other appropriate action.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing

date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul A. Zucker whose telephone number is 571-272-0650. The examiner can normally be reached on Monday-Friday 5:30-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Sullivan can be reached on 571-272-0779. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Paul A. Zucker/
Primary Examiner, Art Unit 1621